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MEGA MULTIMODAL TRANSPORT OPERATORS & MEGA CARRIERS

Report by the UNCTAD secretariat

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Information retrieval

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Abbreviations

APL	American President Line
ECE	Economic Commission for Europe
EDI	Electronic data interchange
EDIFACT	Electronic data interchange for administration, commerce and transport
ESCAP	Economic and Social Commission for Asia and the Pacific
JIT	Just-in-time
LCL	Less-(than full)-container-load
MMTO	Mega multimodal transport operator
MT	Multimodal transport
MTO	Multimodal transport operator
NVO-MTO	Non-vessel operating multimodal transport operator
NVO-MMTO	Non-vessel operating mega multimodal transport operator
NYK	Nipon Yusen Kaisha
OECD	Organization of Economic Cooperation and Development
TEU	Twenty-foot-equivalent unit
TRAINMAR	Training in maritime transport
VO-MTO	Vessel-operating multimodal transport operator

INTRODUCTION

(i) In its resolution 67 (XIV) 3.b, the Committee on Shipping requested the UNCTAD secretariat "to make available... A report on the practical problems faced by Governments and commercial parties involved in multimodal transport and/or container operations including the possible effects of mega multimodal transport operators on the total distribution system in the context of multimodal transport from and to developing countries".[1] The present report has been prepared in response to this request.

(ii) The report contains three chapters. Chapter I attempts to define mega multimodal transport operators and describe their early evolution. Chapter II traces the growth of mega carriers, mega multimodal transport operators and niche operators. Chapter III looks at their impact on developing countries.

(iii) The report has been prepared after extensive interviews with a number of the major companies that might qualify for mega multimodal transport operator status. It has not, however, been possible to obtain detailed financial accounts which might have allowed a more in-depth investigation to be made.

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1 *Report on the Committee on Shipping on its fourteenth session*, annex I (TD/B/1264).

SUMMARY AND CONCLUSIONS

1. Multimodal transport operators (MTOs) are normally divided into two types, those that operate vessels, called "vessel-operating MTOs" or VO-MTOs, and those which do not. This second type is therefore known as "non-vessel-operating MTOs" or NVO-MTOs. In either case the MTO is the transport provider responsible for the goods from point of (inland) delivery to point of (inland) destination, also known as door-to-door transport. In practice, multimodal transport was born with the introduction of the container.

2. When containerization was introduced in world shipping it sowed the seed for the almost inevitable development of huge transport service providers. These companies have now grown so large that one speaks of "mega carriers"[2] or "mega multimodal transport operators" (mega MTOs or MMTOs). While it is common to use the two expressions synonymously, they do not, in fact, cover the same concept.

3. No agreed definition on what constitutes a mega carrier has as yet been reached. However, to qualify as mega carriers, companies must be much larger than their competitors; thus one may establish three criteria. For example, the company must:

   a. Have assets of over US$ one billion or annual revenues in excess of US$ one billion;

   b. Be both huge (mega) and simultaneously a "global carrier", that is have a significant presence in most major trade (East-West) routes of the world; and

   c. Have a certain minimum twenty-foot equivalent unit (TEU) fleet capacity, for example, 80,000 or 100,000 TEUs.

4. The only type of companies that fulfil all three criteria are large container shipping companies, all of which to some extent also act as multimodal transport operators (MTOs).[3]

5. However, while mega carriers may be termed "MMTOs", an MMTO need not necessarily be an ocean carrier; very large NVO-MTOs might also qualify as MMTOs, provided they otherwise meet the criteria for being of "mega" size.

6. A definition of MMTOs, which must include both vessel-operating MMTOs (VO-MMTOs) and NVO-MMTOs, cannot be based on the same criteria as those used for the definition of mega carriers since NVO-MMTOs, no matter what their financial size, by definition do not operate vessels or have any physical presence on any trade route. The last two of the above criteria must therefore be ignored. However, the MMTO must have a certain agreed financial size and it would therefore be reasonable to retain the same financial threshold. Thus MMTOs, whether of the VO or the NVO category, would be expected to have either assets or annual revenues in excess of say US$ one billion.

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2 Mega from the Greek word 'great' (as in megalith: large stone).

3 That is, they accept responsibility for the goods from door to door.

7. The present report suggests that MMTOs must own one dollar of assets for every dollar of turnover generated. However, the financial health of some mega carriers would appear to be precarious in view of recent reports suggesting that container shipping's average annual return on investment over the period 1987 to 1991 was very close to breakeven, if that.

8. The emergence of mega carriers has presented opportunities for entrepreneurs in developing countries to establish feeder services. In many cases, such services are operated by local shipping companies, either existing ones that have developed new services when they were required, or by newly established companies. In the cases where national shipping lines have failed to take advantage of the new technologies, i.e. they have not managed to provide feeder services, they have lost out.

9. The development of MMTOs and of the feeder services of mega carriers has had a direct positive bearing on the trading prospects of developing countries, because the new types of services offer the opportunity to shippers of selling to many more markets than was possible when they had to rely on services which offered a more limited choice of destinations, although freight rates from a (down-graded) feeder port may be slightly higher than rates from the same port when it was a main or hub port. It may nevertheless be said that MT and MMTOs may have a beneficial effect on world trade, in general and on formerly difficult-to-service smaller ports, in particular.

10. The development of mega carriers, using the narrow definitions suggested above rather than the broader one of MMTOs, may be said to have had a negative impact on certain ports the status of which has been relegated from "main port" to "feeder port". On the other hand, with efficient feeder service operations, the necessity of heavy investment in port infrastructure to accommodate the latest generation of large container vessels of maximum economy and profit potential, with their requirements for deep draught and new-generation container gantry cranes, may be somewhat attenuated.

11. The advent of mega carriers has not meant the demise of all other shipping companies; however mega carriers have established new standards of efficiency and quality of service. Their competitors which have managed to offer services of the same standards have prospered while those that have not have suffered.

12. Similarly, the development of MMTOs has brought to bear new competitive pressures on the freight-forwarding industry in many developing countries. This in turn has meant that the fragmented freight forwarding industry must come to grips with its major weaknesses: minuscule size, low professional status and poorly educated staff. In some developing countries steps are being taken to rectify this situation. There is hope for the emergence of a vibrant forwarding industry in these countries, which over time will develop into MTOs and logistics providers.

13. The impact that mega carriers will have on the transport industries, both international and domestic, of developing countries will be significant. Mega carriers and MMTOs must control the door-to-door movement of the cargoes they carry. The future for many of the traditional liner shipping companies, for domestic road hauliers, for rail carriers, and for NVO-MTOs throughout the developing world, and indeed among the smaller developed countries, is likely to be as feeders and contractors for the MMTOs.

14. This prospect may not yet be imminent in many developing countries, so there may still be time to plan to broaden and strengthen present locally owned transport providers to meet the future challenge. Both the expansion of present operators into regional feeder carriers, and the eventual arrival of the mega carriers themselves, may be financially beneficial, owing to the introduction of improved efficiency and the consequent reduction of costs. This will benefit: the suppliers and manufacturers at one end and the end-users and consumers at the other; domestic transport and communications systems, importers and exporters and all other necessary services such as banking, Customs, etc., and hence the overall economies of developing countries. Thus by taking the right steps now it may be possible to have "the best of both worlds". That is, there is a potential to capture the trade efficiencies and lower costs and therefore the anticipated greater profits brought by the availability of mega carriers; it can also encourage a sufficiently large and strong competitive, domestically controlled transportation industry to match profitably, join, or take advantage of the mega carriers.

15. As this offers a potential "win-win" situation, developing countries should welcome such services. It enables their commerce to enjoy the benefits of technology funded and developed elsewhere while becoming or remaining competitive in world markets. Simultaneously, it provides an excellent training ground for management and professionals in the transport service industry.

16. At the opposite extreme, attempts to exclude such services in order to protect outdated, and therefore uncompetitive, transport operators and systems will only be detrimental in the long run to the commerce and economies of developing countries, and to the education and training of management. It will also push countries into less competitive positions relative to developed countries.

17. Suppliers, manufacturers, shippers, exporters, importers, consignees and end-users in developing countries would not already be making use of the services offered by mega carriers if there were no advantages. That the mega carriers and most other large ocean and multimodal carriers are presently making no profit or only limited profits while introducing and fostering these new concepts is of little consequence to developing countries.

18. MMTOs need not, however, own all links in their MT chain. Indeed, some of them have begun to divest themselves of the shore-side operations in order to enhance their financial position. If this trend continues, it will give opportunities to smaller transport providers for domestic operations in these fields. Developing countries should therefore look to management and worker education of efficient domestic services in transport and communications, with a view to improving their competitive advantage.

19. In spite of predictions that mega carrier would soon dominate world transport, what has been seen of late is the rise of a number of smaller so-called "niche operators" that compete successfully on their chosen routes. In conclusion, it may be said that the fear that mega carriers and MMTOs will out-perform all other transport providers, and therefore threaten their existence, may be premature.

Chapter I

DEFINITIONS AND EVOLUTION OF MEGA CARRIERS

A. Developments leading to the birth of mega multimodal transport operators

20. When containerization was first launched in the 1960s, the seed was sown for the transformation of the traditional transport providers from relatively small companies (seen with today's eyes) into the huge transport service companies which now gird the globe. The concept of containerization was embraced somewhat grudgingly by the traditional shipping companies which for years refused to accept the obvious: that the container was the ideal medium for the transport of goods from door to door, and that if this was to be done efficiently, only one transport provider should be in charge of the entire door-to-door operation.

21. The conservatism of traditional liner operators was one reason why they were eventually taken by surprise by more visionary land-based transport providers, namely, the freight forwarders. The latter saw early on the possibility offered by the containers to expand their services. Moreover, freight forwarders were not limited to serving a certain trade route on which their vessels were trading, because they did not have any vessels. They were therefore free to expand their business beyond their "normal" trading areas; indeed they quickly found their way into North-South trades. Freight forwarders had long arranged for door-to-door transport, but only as agents. Containerization allowed them, with relatively little risk, to become carriers in their own right, offering door-to-door services using the liner services as unimodal (sub) carriers for the ocean leg. The more adventurous freight forwarders thus quickly became so-called non-vessel operating multimodal transport operators (NVO-MTOs) and as a consequence expanded their business substantially.

22. This expansion was achieved by a combination of the establishing of own branch offices and/or taking-over existing freight-forwarding companies along the routes they had decided to serve. In this way they extended their international services networks into the developing world where they had often previously had insufficient business to operate profitably. These take-overs have had both positive and negative implications for the local freight-forwarding industry in developing countries. The positive aspects can be identified as a realization among the more progressive freight forwarders in developing countries of the need to provide better quality services. This has led many freight-forwarding associations in developing countries to engage in serious training of their staff, for example, through the application of the UNCTAD/ESCAP-developed TRAINMAR course for freight forwarders. The negative implications are that the establishment in a country of highly efficient branches of NVO-MTOs from developed countries places considerable competitive pressure on the indigenous forwarders. In some cases these companies have not had the necessary level of service capability to retain their position within the industry.

23. The success of the NVO-MTOs has forced the traditional liner companies to meet the competition by providing similar door-to-door services. In this way they have become vessel operating MTOs (VO-MTOs). At first they subcontracted virtually all land transport operations, but then little by little they felt compelled to have firmer control over these operations. This was done through a series of acquisitions of land-based companies - road hauliers, freight forwarders, Customs-clearance agents, inland waterway operators and railways, where this was possible. Again, the take-over

of local freight forwarding companies by the foreign transport providers meant a squeeze of the market share on the remaining independent local forwarders.

24. As MT developed, it became clear that the traditional scheduling of liner services with one or two departures per month (with each of the many competing liner companies all scheduling their sailings at mid and end month dates) no longer corresponded to the needs of their clients. The number of sailings therefore increased first to weekly departures with "fixed day of the week" schedules, and later, on major trade routes, with two or more sailings per week.

25. Liner shipping companies responded to these demands by developing a system of "burden-sharing" through the creation of consortia where several liner companies provided joint services either through joint marketing or by retaining their individual marketing identity.

26. At first, the creation of consortia meant the amalgamation of fleets of different companies. These fleets consisted of dissimilar types of vessels which, as one example only, forced the scheduling of the consortia fleet in such a way that all vessels in the fleet sailed only as fast as the slowest. This reduced efficiency levels and financial investment to that of the lowest common denominator which tended to lower potential profits while at the same time eliminating the possibility for independent operational action.

27. For this reason, a small number of large, financially well-endowed operators preferred to remain "independent". These "independents" were, however, a small minority, numbering say four or five at the most. The rest of the liner industry was firmly established in "traditional" consortia.

28. The problems associated with the operation of dissimilar fleets soon became apparent; when new vessels were ordered by individual consortia members, harmonization was sought of sizes and speeds so as to eliminate some of the fleet scheduling problems referred to above. Nevertheless, competition was fierce and in due course this resulted in a series of bankruptcies and mergers through which the successful survivors grew in size and power. However, these developments also showed that the existing system of consortia was too inflexible to survive in its original form and new groupings began to emerge.

29. In parallel with the dramatic growth of the size of transport providers, the whole concept of manufacturing and sourcing developed equally dramatically. One reason for this was the increasing use of executives with a financial background as chief operating officers. Contrary to some of their traditional predecessors, who habitually had risen through the ranks from an administrative, operational or engineering orientation, these financially trained executives paid close attention to costs. They were aware that goods in stock were financed by borrowed money; thus, as the cost of money increased when interests rates rose, they devised ways in which to minimize the cost of holding goods in stock. Instead of having large quantities of goods stored in warehouses, a "pipeline system" of movement of goods was developed where the careful timing of the arrival of the goods to market was an integral part. This became known as just-in-time (JIT) delivery.

30. JIT depends on an almost seamless flow of goods from manufacturer to consumer. It is a system which requires smaller but very regular shipments. The result of the introduction of JIT has led to the earlier-mentioned increase of sailings first into "fixed day of the week" schedules and later into daily departures on the main trading routes. However, with the reduction or virtual elimination of stocks, allowances for faulty goods disappeared. This meant that the transport provider

had to deliver goods not only on time, but also in perfect condition. This, in turn, made quality control much more important than in the past.

31. These changes had wide ramifications. In 1989/91 cargo movements and ships' ages combined, on many major trade routes, to force shipowners to order, for delivery in 1991/93, vessel replacement of upgraded capacity, speed and/or technological advancements. The capital-intensive nature of this change also necessitated a "rethink" on profitability, investment and, most importantly, possible sources of funding. Thus, over a period of only a couple of years up to and including 1993 (the process has not yet ended, but appears to be slowing down) there has been a rationalization in the industry worldwide: in consortia, in shareholding, in the introduction of new tonnage, in the expansion of the concept of multimodalism, and among the players themselves, and their policies, plans, and their relationships with each other.

32. In spite of the development of consortia, or perhaps because of their inherent inflexibility, the companies which made the greatest gains during this period were those few which had chosen to remain independent. These companies grew to become truly very large. Moreover, despite their already large size, even these big carriers discovered that it might be advantageous for them to join forces with other like-minded operators. This led to new groupings, which, unlike the old-fashioned consortia, utilize slot-charter arrangements where one carrier charters a number of (container) slots on another company's vessels and *vice-versa*. Schedules are coordinated but management remains separate. Such slot-charter arrangements exist today between both smaller operators and the very large shipping companies. In spite of their big container-carrying capacities, actual and potential MMTOs seem, at least for now, to prefer cooperation in one form or the other.

33. Yet another development - and an outcome of those previously mentioned - was the discovery that if this new system was to function well, very accurate forecasting was necessary and equally accurate information exchanges were required. Fortunately, electronic data interchange (EDI) emerged at the same time. This technique answered the need for speedy transfer of large volumes of data. In due course EDI evolved into what is known today as EDIFACT (electronic data interchange for administration, commerce and transport). Under the guidance of Working Party No. 4 of the Trade Committee of the Economic Commission for Europe (ECE), this eventually became a globally recognized system now known as UN/EDIFACT.

34. It has been said that there is nothing in the future that will not be affected by EDI. This revolutionary technology is having a significant impact on all fields of business and industry in the developed countries.[4] In many developing countries various forms of EDI have already become a fact of life. In these countries national carriers, like the major international ocean carriers, have invested in EDI if only for competitive purposes. The trend is that where international surface transport has not yet incorporated EDI, when the mega carriers arrive, they quickly introduce these systems.

35. However, managing the vast quantities of data which result from operating a great number of large container vessels efficiently is a finance-hungry activity. Those who do it best are the large transport providers with sufficient capital resources.

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4 *MT Newsletter* No. 3, UNCTAD, 1991, p. 6.

36. The result of these separate developments has been the emergence of a limited number of very large container carriers, most of them being at the same time MTOs. They are the ones who became known as "mega carriers". In addition to being MTOs, the mega carriers are also mega MTOs, or MMTOs.

37. While an agreed definition of mega carriers seems so far to have eluded transport commentators, it may be noted that the ten major ocean transport companies (that were also MTOs) in 1989 had yearly revenues ranging from US$0.7 billion to US$2.6 billion each, with assets worth between US$0.5 billion and US$2.6 billion. The latest, but still incomplete, figures for 1992 show increases of up to 27 per cent over the 1989 levels. The forecast is for increases in turn over by the year 2005 of four times the 1989 levels.[5] Admittedly, such figures are often quoted for a company only part of which engage in MT, but they still give a picture of the magnitude of the companies involved in the quest to become mega carriers.

38. One way of defining a "mega carrier" might therefore be purely financial: above a certain threshold the company is a mega carrier, below it is not. The parameters of the cut-off point would be up to the individual, but one could say that to qualify as an mega carrier, a company would probably need assets of over US$ one billion or annual revenues in excess of US$ one billion. In considering whether this arbitrary limit is "appropriate", it may be well to realize that, for example, NYK increased its 1992 sales by US$1.5 billion.[6]

39. The NVO-MTOs have also been making relatively large investments, but in services rather than in hardware, as competition from their peers and from the expanding ocean carriers forces them into providing service in areas with only long-term prospects of profits. Although their asset values are much lower than those of the large ocean carriers, some of the largest European NVO-MTOs nevertheless have turn-overs similar to, or larger than, those of many ocean carriers. Consequently, such NVO-MTOs may also be classified as MMTOs, or rather mega-NVO-MTOs. However, since they are only using and not operating ocean carriers, they are not considered to be mega carriers.

40. Some commentators who have tried to define what constitutes an MMTO claim that an MMTO must be both huge (mega) and simultaneously global, that is, have a significant presence on most major trade routes of the world. As with the question of a financial limit, the definition of what constitutes "huge" requires the MMTO to have a container fleet capacity of a certain minimum number of twenty foot equivalent units (TEUs). This could be, for example, 80,000 TEUs. Only some six or seven (shipping) companies are of this size. If the limit is raised to say 100,000 TEUs, the number drops to three or four carriers only.[7] If the limit is lowered to say 60,000 TEUs, a total of about 12 or 13 (shipping) companies might qualify.[8] However, when the TEU limit is combined with the demand for a global presence, only a handful of ocean carriers can be said to be MMTOs that qualify both in size and presence. Furthermore, such a definition would exclude

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5 See, for example, "Globe Trotter", *Port Development International*, Volume 9, Number 5, West Smithfield, United Kingdom, May 1993, p.17, or "K-Line acts to counter the slowdown", *Lloyd's Shipping Economist*, " London, Vol. 15, No. 7, July 1993, p. 20.

6 "Japanese lines see marketing efforts as way to increase sales", *Lloyd's List*, London, 10 October 1993, p. 2.

7 Maersk, Sea-Land, Evergreen, and NYK.

8 Mitsui-OSK, P&O, K-Line, Hanjin, Nedlloyd, Zim, APL, Hapag-Lloyd, and Neptun Orient Line in addition to those listed above (source: *Containerisation International*, November 1993, p. 35.

all NVO-MTOs, whatever their financial size, since NVO-MTOs by definition do not have any physical presence in any trade route.

41. Finally, there is a category of MTOs which is habitually neglected, the so-called "express carriers", i.e. companies which compete primarily with established postal services, but which have branched into the carriage of parcels the sizes of which tend to increase, so that today they must be considered as *bona fide* MTOs or even MMTOs. As they are also owners and/or operators of assets of considerable value, mainly aircraft and delivery vans, they should not be ignored. The largest have more than 100,000 employees, operate hundreds of aircraft and tens of thousands of trucks, and have revenues that run into billions of dollars. DHL, according to newspaper reports was expected to have a turn-over of US$3 billion in 1993[9] while one other company had a global 1992 revenue in excess of US$16 billion (including domestic operations within the United States of America). Another company expected its 1993 revenue to reach US$7.8 billion.[10] However, for the purposes of this study it has been decided that they cover a market so specialized that it may be pardoned if they are not taken into consideration.

B. Development of feeder services

42. The major trade routes of the world run East-West. For this reason, the development of mega carriers initially had little influence on trades from or to developing countries, apart from those were situated directly on these East-West trade routes. However, as time passed and systems were perfected, the VO-MMTOs increased the size of their vessels and reduced the number of ports of call. Those ports which continued to be served were called "hub ports". A few of these are located in developing countries. When the world economy contracted, the VO-MMTOs found themselves with an increasing number of empty container slots. This led, *inter alia*, to the expansion of their services into the North-South trades.

43. However, the efficient large container vessels, the so-called "main haul" or "mother" vessels, could not be diverted to ports outside the East-West trade routes because of the added cost and lack of appropriate infrastructure. Instead, growing networks of local "feeder" services developed to "feed" cargoes to the main haul vessels. A parallel to this development is the airline industry 's "hub and spokes" services which have been well developed.

44. The concept of feeder cargoes helping fill "main-haul" vessels predates containerization, yet it was containerization which brought it to the level of perfection attained today. With today's efficient transport systems, the importance of direct calls by "main haul" vessels has diminished for both ocean carriers and traders, but perhaps not for the by-passed ports. It must also be noted that downgrading of a port from "main" or "hub-port" status to that of feeder port may increase freight rates to and from such a port.[11] The policy of which ports to call and which to omit,

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9 *Journal international de transport, Overseas Digest*, Basel, Issue 32/1993, p. 2713.

10 Information made available to the UNCTAD secretariat by the express carriers.

11 See, for example, "Big Swedish shippers join forces", *Journal pour le transport international, Overseas Digest*, Basel, 40/1993, where it is claimed that freight rates increased by US$125 per 20-foot container and US$225 per 40-foot container when the port of Gothenburg was downgraded to feeder port status, p. 3437.

depending on cargo flows etc., is nevertheless open for continuous review and today's feeder port may become tomorrow's hub port if the conditions are right.

45. It is evident that the development of feeder services has had a direct bearing on the trading prospects of developing countries. Precisely because of the existence of networks of feeder services that feed into the ocean carriers' main-haul services which, in turn, feed into other relay and/or feeder services, coupled with the development of NVO-MTOs who offer less-than-container loads (LCL) consolidation services, small shippers now have access to a much larger range of markets. An UNCTAD has report suggested that ocean carriers, by organizing "secondary transport networks served by purpose-designed feeder ships, have increased the number of ports served from a single port of shipment. By extending their operations upstream and downstream, they have achieved sweeping economies of scale and gained other advantages that have enabled them to offer shippers a made-to-measure service."[12] It may thus be said that MT and MMTOs may have had a beneficial effect on world trade, in general, and on formerly difficult-to-service smaller ports, in particular.

46. While, at first, feeder vessels were very small, 50 twenty-foot equivalent units (TEUs) containers vessels were not unusual, the norm is now ten times larger, with some MMTOs running feeder vessels with a carrying capacity of over 1,500 TEUs, or more than many first generation ocean-going full container vessels. In the autumn of 1993 American President Line (APL) was reported to be in the market for the largest "feeder" vessels ever contracted; sizes of "at least 3,000 TEUs" were reported.[13] This has led to a certain blurring of where feeder services terminate and main haul routes commence. While on certain MMTO routes perhaps only 25 per cent of the containers on the "main haul" vessels will actually be carried on two different vessels, on other MMTO routes the proportion may easily reach 50 per cent, and to certain destinations, perhaps close to 85 per cent. Smaller operators, for example, the "niche carriers", would have a much smaller percentage of containers carried on more than one vessel.

47. Not all feeder services are provided by the MMTOs themselves. In many cases, they are operated by local shipping companies, either existing ones that have developed new services as required, or those newly established. Where national shipping lines have failed to change with the introduction of new technologies, i.e. they have not managed to provide feeder services, they have lost out.

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12 "The establishment of transhipment facilities in developing countries" (TD/B/C.4/AC.7/10), para. 1.

13 "APL announces new series", *Containerisation International*, The National Magazine Company Ltd., London, October 1993, p. 9. Later, the size of 3,600 TEUs was reported in, e.g., *Seatrade Week Newsfront*, Colchester, United Kingdom, Vol. XII No 49, p. 6.

Chapter II

GROWTH OF MEGA CARRIERS AND NICHE OPERATORS

48. Traditionally, liner companies carried cargo from port to port and their tariffs reflected this. The intention was to cover costs of the ocean transport and the cost of loading, stowing and unloading the cargoes in addition to a certain profit margin. A number of UNCTAD reports have dealt with the question of setting ocean freight rates.[14] However, with the development of MT services, freight rates must cover not only the traditional costs mentioned above, but also all the pre and post ocean modes and interface costs. A set of model rules for multimodal container tariffs was developed under the auspices of UNCTAD by a group of experts[15] to harmonize these tariff rules. It is, however, not the object of this report to discuss the vexing question of MT tariff rate setting or coverage.

49. The impact of globalization and concentration of services provided by MTOs has meant large capital investments. Furthermore, most global carriers also needed more money to expand into land-side "value-added" distribution systems, first into rail landbridge investment in North America then into road, rail and inland waterway transport in Europe, including the former Eastern bloc countries, prior to expansion into the developing countries of Asia, Africa and Latin America.

50. It is not only the growth of existing markets of the VO-MTOs that has entrained the recent rapid growth of the large shipping companies. Their expansion into related markets through take-overs and vertical integration in order to provide value-added services has also played an important part in the process.

51. Only by growing to enormous size could the systems be afforded, the hardware obtained, and the market share seized. However, to achieve the level of revenue required to sustain such growth, these transport companies faced increasing requirements for heavy investments, large resources of personnel and hardware and of cash.

52. Expansion in the modern multimodal container transport industry to reach mega carrier status is highly capital-intensive and cash-consuming. Typically, a company must own a dollar of assets for every dollar of turn-over generated. Thus mega carriers, purely in their MT businesses, both own and sell US$1 billion of business annually on average.[16]

53. A few quotations from transport commentators may illustrate the point. Some time ago a senior American banker said, "today the mega carriers are really in asset management - a field of fewer and bigger players - rather than in shipping. I foresee enormous concentration in the

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14 For example, "Shippers interests and freight rates negotiations", (TD/B/C.4/332), or "Ocean freight rates and their effects on exports of developing countries" (UNCTAD/ST/SHIP/11).

15 See "Final report of the Group of Experts to develop and recommend model rules for multimodal container tariffs", Palais des Nations, Geneva 1-5 December 1987 (TD/B/C.4/308).

16 Damas, P., "Cash & Carry", *Containerisation International*, London, January 1991, p. 29.

business, where there is little room for niche operators... [and] ...it is essential for the survival of operators which cannot become giants... to reduce the level, or the risk factor, of assets accumulated."[17]

54. Another commentator echoed this view when he said, "during the next 20 years some large transport groups will expand the current trend of owning multimodal systems linking ocean, rail, air, land, and forwarding."[18] A third believed that "the whole process will be effected by the former [liner] shipping companies... because they have the necessary financial capability, expertise on trade and transport regulations, procedures and practices and an integrated network of offices linked by modern communications".[19] Finally, it has been said that "what carriers are doing is building a global transportation or distribution system. The urge to become a "global carrier" has become the *credo* of most [shipping] majors".[20]

55. Indeed, not too long ago, leading shipping pundits prophesied that within a relatively short time world liner shipping would be dominated by a few large lines.[21] In no other way could the appetite for cash for capital investment in new and ever larger ships be met, nor could the reorganization which multimodalism requires be financed. Big was not only beautiful but essential.[22]

56. This, indeed, was one of the underlying reasons why the Committee on Shipping called for the present study to be carried out.[23] However, lately, this "traditional" view of unrelenting growth by the mega carriers tending to dominate the industry has been called into question. The emergence of some successful smaller container liner companies in the face of competition from the mega carriers has been cited as proof hereof.[24]

57. For the decade 1980-1989 inclusive, the average corporate growth rate of the ten biggest liner shipping companies was 80 per cent, i.e. an annual compounded rate of just less than 7 per cent (but during the last four years of that decade the growth averaged 12, 22, 11, and 9 per cent, respectively). During the same decade, average freight rates did not keep up with inflation, which, in the words of one industry press report, "averaged 68 per cent according to the OECD while the average income increases of these companies was approximately 60 per cent".[25] That translates into more cargo at lower real rates. A recent press report has suggested that "container shipping's average annual return on investment between 1987 and 1991 was zero per cent".[26] If returns are really that low, one can only wonder why anyone would invest in container shipping.

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17 Wilkinson, H., Manufacturers Hanover Trust Company, London, January 1991.

18 Collins, R., quoted by Butcher, M., "Multimodalism - the Challenge for the 90s", Reform in Freight Transport Conference, Sydney, March 1991.

19 Rimmer, Dr. P., Australian National University, quoted in *Cargo Systems*, London, April 1991, p.25.

20 Anderson, D.L. & Gillies, J., "What can we learn from Western Europe?", Council of Logistics Managers Conference, Anaheim, October 1990.

21 Editorial, *Lloyd's List International*, London, 26th March 1991.

22 *Ibid.*

23 Resolution 67 (XIV) 2 (d) stated *inter alia* that the Committee would "review the studies of the UNCTAD secretariat in the field of multimodal transport and containerization... and make recommendations to Governments and commercial parties as appropriate, bearing in mind: (i) The effects on developing countries of the establishment of very large multimodal transport operations;" (Report on the Committee on Shipping at its Fourteenth Session, *op. cit.*).

24 Porter, J. "Officials cast doubt on 'Mega-Carrier' theory", *The Journal of Commerce*, New York, 2 September 1993, p. 8B.

25 Damas, P., *op. cit.*

26 "Brain Box", *Containerisation International*, October 1993, *op. cit.*, p. 19.

58. Of course, transport providers from developing countries can become MMTOs - one or two already qualify - but in view of the heavy financial requirements and the doubtful economic viability of the services, it may be more prudent to set the aim towards "feeder" or perhaps "niche" container operations rather than towards becoming a mega carrier.

59. The dismal returns obtained by container shipping companies may be one reason for a development which only lately has become visible, a beginning move by some VO-MMTOs of divestiture of the land-based companies acquired at great expense some time earlier, because of a belief (or realization) that ship operators might better "stick to their last", that is, not distort their area of competence but leave complicated inland transport operations to those who know it best and instead concentrate on what shipping companies know best, namely, how to operate ships.

60. However, while the MMTOs may be divesting themselves of some services, they are not withdrawing from the market, low returns not withstanding. A possible answer to why anyone might want to remain in the business of providing VO-MTO services may be that shipowners have realized that they can increase their cash flow dramatically if they engage in MT. The development of MT has meant that the carrier, i.e. the MTO, received more money for transporting cargoes simply because more services were provided. Since the ocean portion of a MT operation often reaches only 30 per cent or less of the total freight bill, it means that the VO-MTOs have more than tripled their cash flow compared to the time when they provided ocean transport services only. To the extent that not all of this additional cash is paid out immediately to subcontractors, this yields an immense financial advantage to the MTOs. It follows from this that the bigger the MTO, the more cargo is carried, hence the greater the cash flow. This may be the key to the relentless drive towards larger MTOs.

61. If this is correct, the world will see the development of two distinct types of VO-MTOs: (i) the VO-MMTOs with vast networks of offices, feeders and "strings" of East-West (and, increasingly, North-South) services backed up by sophisticated EDI services, etc., and (ii) the smaller, yet very cost-efficient VO-MTOs that through concentration on specific niche operations are financially successful in their own right. If this development is sustained, the effects which the emergence of MMTOs will have on VO-MTOs from developing countries may be less pronounced, provided that they are capable of developing into "cost-efficient" "niche-operators". The inefficient, pretentious or high-handed liner operator of yesteryear, who saw clients as there to be milked, only deserves to disappear. Modern cargo transport is a partnership which requires a level of cooperation between cargo provider and transport provider unheard of just a few years ago. Smaller VO-MTOs that successfully can develop into cost-efficient, service-oriented niche operators will survive. Those that cannot will be forced out of business.

Chapter III

EFFECTS ON DEVELOPING COUNTRIES OF THE EMERGENCE OF MEGA MTOs

62. There have been three revolutions in the transportation industry in the last generation. The first was the advent of containerization in the late 1960s which induced shipping lines to extend their services ashore. The second was the change in trading practices in the late 1970s and early 1980s, from few, large shipments requiring large storage facilities along the route, to small frequent shipments which virtually eliminated en route storage. The third was the emergence of EDI in the late 1980s.

63. All three worked to encourage the development of logistics services. These require the development of an intimate relationship between the transport provider - in this case the MMTO - and the client. Those transport providers that can furnish logistics services to the extent required by sophisticated importers in developed countries, will be able to establish a long-lasting relationship with their clients, relationships which will be to the mutual benefit of both transport provider and user and moreover increasingly difficult to break.[27] Those transport providers which cannot achieve this, will wither. MMTOs are of the type of transport companies that can and will provide the services required. They will mount effective campaigns not only to retain clients, but will aggressively go after new ones.

64. By offering such very sophisticated services the MMTOs are providing their clients - both shippers and consignees - with an efficient transport chain and in this way helping to foster increasing trade. In so far as either shipper or consignee is located in a developing country, it may be said that the emergence of MMTOs has a beneficial effect on the trade of developing countries. However, since virtually all MMTOs come from developed countries, their success may prove to be the traditional developing-country transport providers' ruin.

65. It may be disadvantageous to protest against MMTOs seen from a narrow "developing country carrier point of view" since MMTOs do help trade, but the elimination of national transport providers cannot be viewed in simplistic terms. Nevertheless, placing barriers against MMTOs would not be in the best interest of trade. The answer therefore must be to help transport providers from developing countries become more efficient carriers, feeder carriers, and/or perhaps "niche carriers" providing efficient, cost-effective transport services in areas not well-served by the MMTOs. The longer-term future for many of the liner shipping companies, for domestic road hauliers, for rail carriers, and for NVO-MTOs throughout the developing world, and indeed the smaller operators from developed countries as well, may be as feeder service operators and subcontractors for the mega carriers and MMTOs.

66. Fortunately, this prospect is not yet imminent in many developing countries, so there is still time to plan to broaden and strengthen present locally owned businesses to meet the future challenge. Both the expansion of present operators into regional MMTOs, and the eventual arrival of the

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27 See "Inventory of existing mandates and new draft programme of work in the field of multimodal transport and technological development" (TD/B/C.4/232), paragraph 96 (a).

mega carriers themselves, will be financially beneficial to the suppliers and manufacturers at one end of the transport chain and the end users and consumers, domestic transport and communications systems, importers and exporters and all other necessary services providers such as banks, insurance companies, Customs, etc., and the overall economies of developing countries, at the other, owing to improved efficiency and reduced costs. Thus, if the national transport providers in developing countries now take the necessary steps to improve their services, it may be possible to have the best of both worlds: (i) improved trade efficiencies and lower costs and therefore the potential of greater profits that the mega carriers bring, and (ii) a sufficiently large and strong competitive, domestically controlled transportation industry to match profitably, join, or take advantage of the mega carriers.

FUTURE REQUIREMENTS

67. All companies engaged in transport, domestic and international, and in associated fields such as communications, must strive to reach and maintain competitive levels in these areas whether through the development of their own capabilities or through linking up with financially strong multinationals to provide such services. Only with truly competitive systems will national carriers remain viable and survive. With such modern systems, the whole economy benefits. Protection of national operators from competition will prove detrimental to the whole economy compared to neighbours' and direct competitors' economies.

Information Retrieval

KEYWORDS

Africa, Asia, Committee of Shipping, consortia, containerization, ECE, EDI, EDIFACT, ecological impact, ESCAP, Europe, feeder services, feeder ports, globalization, global carriers, hub ports, JIT, just-in-time, Latin America, main haul vessels, mega carrier, mega multimodal transport operator, mother vessels, MMTOs, MTO, North America, NVO-MTOs, OECD, slot charters, technological developments, trade efficiency, TRAINMAR, VO-MMTOs, VO-MTOs.

ABSTRACT

Definitions of mega carriers and mega multimodal transport operators. The influences of just-in-time. Changes in transport cooperation from consortia to slot carters. The influence of EDI. Development of feeder services. The lack of profitability and the importance of cash flows. The emergence of niche operators. The positive effects of trade.

The report contains a summary and conclusions and three chapters which cover the following:

Chapter I: Definitions and evolution of mega carriers;

Chapter II: Growth of mega carriers and niche operators;

Chapter III: Effects on developing countries of the emergence of mega carriers.

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MULTIMODAL TRANSPORT AND TRADING OPPORTUNITIES

Report by the UNCTAD secretariat

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ABBREVIATIONS

ASEAN Association of South-East Asian Nations

CIF Cost-insurance-freight

EDI Electronic data interchange

EXW Ex-works

FCFA Franc CFA

FOB Free-on-board

FTA (Canada-United States) Free Trade Agreement

GATT General Agreement on Tariffs and Trade

GDP Gross domestic product

JIT Just-in-time

MT Multimodal transport

MTO Multimodal transport operator

NAFTA North American Free Trade Agreement

INTRODUCTION

(i) Pursuant to the New Partnership for Development: the Cartagena Commitment, adopted at the eighth session of the Conference, it was agreed, in the terms of reference of the Standing Committee on Developing Services Sectors: Fostering Competitive Services Sectors in Developing Countries: Shipping, annexed to Board decision 398(XXXVIII), that the Standing Committee would focus, *inter alia*, on "the efficient conduct of multimodal transport processes, bearing in mind economic, commercial and legal aspects".[1]

(ii) In its work programme, the Standing Committee, with regard to the field of multimodal transport, technological development and containerization, agreed to "analyse the impact of multimodal transport systems and tariffs on trading opportunities in the context of liberalization and privatization. The need to encourage commercially and economically effective joint-venture multimodal transport operations should be taken into account in such an analysis".[2]

(iii) This report illustrates some of the main impacts of multimodal transport on trade. Trade is essential to any production-consumption cycle. From raw material or commodity, through intermediate manufacturing or processing, up to the final consumer product, goods are subject to a number of sales/purchase transactions. Each of these transactions constitutes a trading opportunity not only for the buyer and the seller, but also for any third-party services provider concerned by the transaction.

(iv) As the result of a transaction, goods are moved to a new place where they will be transformed, stored and made ready for the next transaction. There is hardly any trade without transport, and transport may become an hindrance to trade for various reasons: (1) non-availability or excessive cost; (2) non-suitable transport-related commercial practices or customs of the trade; and (3) a non-favourable regulatory environment on commercial activities, which might lead to reasons (1) or (2) above.

(v) To grasp trading opportunities, that is, to position competitively their goods in the right conditions, at the right time and at the right place, buyers and sellers need access to transportation services which can guarantee, for any given trade, the lowest cost, the shortest transit time, desired frequencies and full reliability. Whereas such requirements are relatively easy to achieve in the context of national unimodal transport services, they are more difficult to satisfy in the context of international transport services using two or more transport modes. Some international transport operators are integrating the services provided by unimodal transport companies operating in different countries into efficient transport logistics chains. While transport logistics services in the past were organized "on behalf of the shipper", more and more transport operators are now offering MT contracts in their own name as reasonable and integrated alternatives for transportation of international trade. Commercial partners now have access to new transport tools which can be used to increase trading opportunities. At the same time, local carriers and transport organizers are facing new

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[1] See the *Report of the Trade and Development Board on its thirty eighth session, second part* (TD/B/1323 (Vol.II)), 1992, B. Terms of reference of the Standing Committees.

[2] *Report of the Standing Committee on Developing Services Sectors: Fostering Competitive Services Sectors in Developing Countries: Shipping on its first session* (TD/B/39(2)/5-TD/B/CN.4/13), 1992, annex I.

challenges to provide value-added services, taking advantage of new forms of co-operation, such as joint ventures.

(vi) This report comprises three chapters. The first chapter describes trading opportunities with the production-consumption cycle. It explains the importance of transport in a globalized production-consumption cycle and shows that the cost-effectiveness of supply, production and distribution processes depends, among other things, on efficient transport. The second chapter outlines three general transport-related areas that could lead to improved trading opportunities: a logistics approach to production and transport; better commercial practices to assign responsibility for door-to-door transport operations; and appropriate government policies and regulations to stimulate competitiveness in the provision of transport services. The last chapter presents multimodal transport as a value-added service offered to the trading community. The MT approach is more than just transport logistics; it requires the support of buyers and sellers, and it is based on a minimum legal environment. An MT approach to international transport is probably the only means to integrate the scattered improvement potentials discussed in chapter II into a powerful new transport system that will facilitate transactions for traders, open new transport services opportunities for local transport providers, and bring about a reorganization of the existing legal and institutional organization of the transport sector of developing countries. The chapter stresses that, although it is difficult to quantify the importance of MT, a coordinated approach towards the implementation of this concept can improve trading opportunities not only in the short term but also in the longer term. As a result of "thinking multimodal", commercial relationships between trading partners might change, and physical distribution organizations become more efficient. New business opportunities will result for local transport operators, provided an appropriate legal environment, based on liberalized policies, is established.

SUMMARY AND CONCLUSIONS

1. World markets are becoming increasingly "globalized". To a large extent, this reflects the fact that most, if not all, countries are adjusting to the strong trade liberalization pressures observable around the world. These pressures stem from several international trade agreements, including the General Agreement on Tariffs and Trade (GATT), the Canada-United States Free Trade Agreement (FTA) and now the North American Free Trade Agreement (NAFTA). There is also the development of other trading blocs like the European Union, the Association of South-East Asian Nations (ASEAN) and the growth of intra-Asia trade. These trade policy initiatives have a common objective: to open up new trading opportunities by facilitating international trade. These initiatives are also leading to the integration of the trading policies of the nations involved, and to the harmonization of their transport-related trading policies.

2. Tougher international competition and expansion of geographical markets have forced manufacturers to focus on integrated production and transport logistics strategies in order to reduce costs, and -at the same time- to obtain higher service standards. The need to control transport costs has become as important as the need to keep down other production costs. The emergence of reliable and competitive door-to-door multimodal transport services can contribute to, and foster, new trading opportunities.

3. Multimodal transport takes advantage of the recent developments in container-based transport logistics to offer better and more cost-effective services for shippers. For example, the efficient and rapid pace of land-side intermodal developments has led to new competitive sea-rail intermodal alternatives to traditional all-water operations, and the level of efficiency of both conventional and double-stack train services has enabled ocean carriers to achieve better utilization of their fleet.

4. Moreover, multimodal transport adds a new dimension to the international transport of goods. It offers a different, responsible, relationship between the supplier of services and the shipper requiring those services. The supplier of multimodal transport services is not a simple intermediary or a shipper's agent which organizes transport operations without accepting any form of responsibility for the goods; it is a carrier, an entity responsible to the shipper for the goods under its custody, from origin to destination.

5. Transport is no longer a major barrier to trade between developed countries. Indeed, North-North trade routes are served by a large number of continental and intercontinental transport operators, within a competitive commercial environment, based on commercially-oriented trade and transport regulations. However, transport remains an impediment for the international trade of many developing countries. North-South and South-South trade routes are served by relatively fewer transport operators; operational conditions are less favourable; risks are higher, etc. For these countries, this situation results in a failure to develop their international trade potential, in higher prices for imports, in lower foreign exchange earnings from exports, in restricted investment and employment and, thus, in limited economic growth. Any improvement made to present transport conditions is likely to have very significant effects on the economies of these countries and on the prosperity of their traders.

6. Trading opportunities can be improved by implementing transport logistics operations, by leaving the responsibility for the entire transport operation to only one trading partner, and by an appropriate legal environment which stimulates the provision of efficient local transport services taking advantage of joint ventures. By managing these potential improvements under a multimodal transport approach, synergies can be created resulting in unexpected trading opportunities for both local traders and transport services providers to the benefit of their national economy.

7. Such a coherent multimodal transport approach can bring short-term benefits to local traders and transport operators, as well as longer-term consistent structural changes in the transport of a country's international trade. A better awareness on the part of all concerned is probably a key element for the development of such an approach. Appropriate technical assistance in creating this awareness and implementing the necessary changes might be another.

Chapter I

TRADE OPPORTUNITIES AND PRODUCTION-CONSUMPTION CYCLE

A. ELEMENTS OF TRADING OPPORTUNITIES

8. A trading opportunity between a seller and a buyer emerges from having the right product, at the right place, at the right time and at a competitive price. Depending on whether the product is a consumer good or a producer good[3], the seller might be the producer (a manufacturer, a farmer, a mining company, etc.) or an intermediary (another manufacturer, a trader, an exporter, etc.), and the buyer the final consumer or another intermediary (a manufacturer, a trader, an importer, etc.).

9. To create a trading opportunity, four basic functions must be adequately performed: the provision of, or access to, the goods (through manufacturing or trading); the storage of the goods; the transport of the goods; and their marketing. Manufacturing creates and trading locates goods which are planned for customers' satisfaction (right product); storage holds these goods until the time when they will be used (right time); transportation brings them to where they will be used (right place); and marketing transfers the ownership of the goods to the person to whom they are useful (competitive price).

10. Between production and consumption, a given product passes through various trade transactions along the different stages of its production and commercial organization. Each stage increases the value of the product by aggregating to it further manufacturing/transformation activities, or by moving it (transport) and keeping it (storage) closer to the next customer in the production and commercial chain. Each intermediate sales/purchase transaction becomes a trading opportunity for the commercial parties involved (seller and buyer at this particular stage), as well as for any third-party services provider involved in the intermediate transaction. Box 1 highlights the transport-related stages that comprise a typical production-consumption cycle.

11. Relatively few goods are made at the direct order of the consumer[4] or for the producer's own consumption, as most goods are produced in the expectation that they will be sold in domestic and international markets to other manufacturers, traders or final consumers. This expectation may be tempered by the production cost of the goods and by possible natural and man-made barriers.

12. Any given production process depends on factors such as labour, land, capital, management and technology, which can usually be combined in different ways according to the availability of each factor and the local conditions at the place of production. As a result, the same product can hardly have the same price in two different locations, be it regions

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[3] *Consumer goods* are goods used by consumers to satisfy their wants; *Producer goods* are goods used in the process of producing other goods.

[4] Although, in some industrial sectors (i.e., the automotive industry), first there might be an order for and sale of a product and, subsequently, its production.

Box 1

Producer	*(a)*	*Sells ex-works (EXW)*
Exporter	*(i)*	*Buys EXW from the producer;*
	(b)	*pays inland transport to the port of loading;*
	(c)	*pays loading charges onto the ship;*
	(d)	*pays (possibly) local cargo insurance premium; and*
	(e)	*sells free-on-board (f.o.b.) at the loading port.*
Shipper	*(f)*	*Buys f.o.b. at the loading port;*
	(g)	*pays ocean freight;*
	(h)	*pays all charges for port use;*
	(i)	*pays marine cargo insurance premium; and*
	(j)	*sells cost-insurance-freight (c.i.f.) at the unloading port.*
Importer	*(i)*	*Buys c.i.f. at the unloading port;*
	(k)	*pays cargo handling charges from quay to means of delivery;*
	(l)	*pays storage charges;*
	(m)	*pays for the charges/duties/taxes on cargo;*
	(n)	*pays inland transport and related insurance premium to place of delivery; and*
	(o)	*sells the cargo at the place of delivery.*
Consumer	*(p)*	*Buys the goods at the place of delivery;*
	(q)	*pays inland transport and (possibly) related insurance premium between the place of delivery and the place where the commodity is to be consumed.*

within the same country or countries.

13. Natural barriers refer to all the non-policy reasons why the same goods can sell for different prices in different locations. They fall primarily into two categories: transport costs, and a variety of factors that result from a lack of information (sometimes called "rational ignorance"[5]) on the part of buyers and sellers. Transportation costs include all direct and indirect costs related to transport, storage and handling operations; and the remaining factors reflect, among other things, the impact of communications costs and the fact that different countries have different customs and regulations.

14. Man-made barriers encompass all policies that create, or add to, price differences. They include policies such as import restrictions, special incentives or restrictions on exports, foreign exchange policies, departures from national treatment, etc.; they also include policies which act to increase the costs imposed by natural barriers, such as regulations in the transportation and communications areas that keep prices of these services artificially high.

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[5] Rational ignorance occurs when a buyer or seller remains uninformed of the full range of market opportunities because the expected cost of becoming informed exceeds the expected benefit.

15. Production costs and natural or man-made barriers affect domestic and international trade differently. Indeed, international trade has two important features that do not apply to domestic trade: (1) it involves the use of foreign standards of value and media of exchange for either or both trading parties; (2) it is subject to different laws, customs, cultures and languages. Frictions, costs, and uncertainties associated with transactions across national frontiers, together with differences in customs and regulations, to some degree act to inhibit trade flows.

B. TRANSPORT IN THE PRODUCTION-CONSUMPTION CYCLE

16. In the search for a compromise between production costs and trade barriers, transport and distribution-related activities, which were originally considered as subordinated to production, are now an integrated part of a process that starts with the collection of raw materials and ends with the distribution of the final product to the final consumer. To keep a tight control of all expenses and to preserve or improve their competitiveness, manufacturing industries searched for economies of scale in production processes and took advantage of the global potential of the division of labour. This resulted in the spatial concentration of larger but fewer production units supplying the same or even an increased geographical market. Production is now fragmented into highly specialized but complementary units, sometimes quite far away from each other. Multiple-site manufacturing and assembly, working on reduced inventories and spanning countries and continents, is a common practice. As a consequence, shipments are becoming smaller but more frequent, and require efficient, speedy and flexible distribution systems.

17. The competitiveness of internationally traded products is greatly influenced by various factors which build up the overall transportation cost. The main ones are: (1) costs associated with transport operations; (2) overall transit time required for moving goods from origin to destination; (3) time reliability in delivering goods; (4) safety of goods; and (5) uncertainties about overall transport costs.

18. The cost associated with the physical transfer of the goods is an essential piece of information in the negotiation of an international trade transaction. To maintain the competitiveness of his products, the seller must make sure that this cost is as low as possible. However, on any particular trade route, this cost is made up of a number of cost elements corresponding to the services provided along each specific link. These elements cannot always be clearly quantified beforehand.[6]

19. Some cost elements (direct costs) are directly related to services provided. In general, they are based on published tariffs which reflect the local market conditions, the quality of the service, the management capacity of the service provider, etc.[7] These considerations

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[6] For example, because of unexpected delay in the provision of a railway service, goods might have to be stored at an interface point during a longer period than originally planned. Additional storage charges will be incurred which had not been foreseen in the transport cost as originally estimated.

[7] As an illustration of this point, an ECLAC study ("The restructuring of public-sector enterprises", Cuadernos de la CEPAL, No.68, 1992) mentions that the road carriage industry in the ECLAC region is composed of private companies with a limited number of heavy trucks and many owner-operators whose equipment can generally transport no more than 8 to 10 tons. Marine containers are generally loaded with 11-24 tons, so the majority of such units must be emptied at ports before goods can be transported to their ultimate

depend on the state of the local infrastructure and equipment, and on the local infrastructure/equipment maintenance policy to provide reasonable transport services. They also depend on the local capacity to plan human resource development in order to assist managers in making the best use of existing infrastructure and equipment.

20. Other cost elements (indirect costs) are a consequence of the services provided. They build up as financial costs resulting from poor operations (low speed, unexpected delays, etc.), as additional costs (e.g. increased insurance premiums), or as "consequential costs" (e.g. sales opportunities lost because goods are not readily available). They reflect the efficiency of the services, the level of risks involved, and the capacity of services providers to cope with administrative and operational problems.

21. Transit time is an important element as goods in transit cost money (inventory costs). For example, a container carrying 800 car doors weighing 15 kg each, enough to equip 200 cars, might have a value of approximately US$ 60,000. The daily inventory cost of the 800 doors (based on a 10 per cent interest rate) can be estimated at US$ 16. Any reduction in transit time would therefore reduce the overall cost of the delivered goods. Transit time can be improved by increasing transport speed while cargo is moving on any particular transport mode, and/or by reducing idle time while cargo is waiting at some interface point for its next movement. The lack of proper intermodal coordination of transport operations or the excessive burden of administrative/documentary requirements might neutralize any effort or investment in increasing commercial speed.

22. To reduce the financial cost of their inventories, producers favour arrangements that supply the required input goods "just-in-time" (JIT), that is, within a short time span before the anticipated use in production or sale. Under these conditions, time reliability is very important. In the previous example, if the container does not arrive as scheduled, the 200 cars (at a price of, say, US$ 10,000 each) cannot be assembled and delivered on time. Therefore, the container has a "value" of 200 times US$ 10,000 (US$ 2 million), and the daily loss on such a stranded container can be valued at US$ 550. But, more importantly, production might have to be stopped at very high costs: idle work forces, unused equipment and facilities, etc. An industry operating under tightly scheduled operations (JIT production chains) cannot afford such delays on delivery. An exhaustive study on price competitiveness in international trade[8] found that buyers are often willing to purchase more costly goods if they have shorter, highly reliable delivery times.

23. Safety of goods is equally important. Any loss or damage, because of theft, mishandling, poor quality packaging or physical damage caused by accident will result in the non-availability of the goods at the expected time and place, and in the expected conditions. The financial consequences of such non-availability, in addition to the cost of the loss or damage, are similar to the time reliability consequences mentioned above.

24. Finally, uncertainty in cost quantifying (direct as well as indirect) is another critical issue faced by traders and might disadvantage an exporter. For example, on a c.i.f. sale transaction, the additional cost resulting from any undue storage at the port of loading might absorb much of the profit margin expected from the transaction, since the seller has to cover

destinations.

8 Kravis, Irving and Robert Lipsey, *Price Competitiveness in World Trade* (Columbia University Press: New York, 1971), pp. 158-165.

all transport costs up to the port of unloading.

25. The above-mentioned considerations indicate that trading opportunities can benefit from better organized transport services. To take advantage of such transport services, sellers and buyers must adapt their commercial practices, and governments must provide the transport services providers with an institutional, regulatory, and operational environment which can stimulate the provision of commercially viable services. These aspects are discussed in the following chapter.

Chapter II

MEANS FOR THE IMPROVEMENT OF TRADING OPPORTUNITIES

26. The Secretary-General of the Organisation for Economic Co-operation and Development (OECD) said: "*The regular decline in transport costs, the free and instantaneous circulation of capital and information, the immediate diffusion of technology have allowed countries with low wage levels to implement the most modern manufacturing technologies and to compete efficiently with the industrial countries' production.*"[9] This situation is the result of drastic changes in production and transport systems, in commercial practices, and in governmental policies.

A. PRODUCTION AND TRANSPORT LOGISTICS

27. To cope with the new production pattern based on globalization and on the integration of transport in the production-consumption cycle, manufacturing industries started introducing new manufacturing and inventory techniques under the all-embracing term of *logistics*.[10] This system's approach to the individual activities (supply, production and distribution) in the manufacturing process eliminates the separation between such activities and links them in new and more powerful combinations to achieve increased levels of efficiency, enhance quality and reduce costs of finished goods.

28. Logistics improves productivity by: (1) reducing the size of inventories which, where the production system is not very flexible, absorb [cushion] discrepancies between supply and demand; and (2) matching output to demand. This implies strict control of the supply, output and distribution of goods, which have to be planned for and geared to real demand rather than forecast demand. This approach has become feasible as a result of progress in: (1) micro-electronics, for gathering basic data; (2) robotics and automation, for flexible production; (3) communication networks and information processing techniques, for rationalizing the system; and (4) transportation, for bridging the spatial gap between production and consumption.

29. Logistics has led to JIT techniques, seamless trading and centralized warehousing. It has alleviated some of the pressure on working capital tied up in inventories, office and storage space, and thereby increased the volume of goods and services in the supply chain. The capital freed by reducing inventories and increasing production capacity utilization can then be used for other investments. Logistics results in higher productivity in both production and transportation and thus cuts the total cost of supply, production and distribution.

30. Transport logistics, that is, the integration of transport with other services (including

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[9] M. Jean Claude Paye, in an article published in "Le Monde", 24 February 1993.

[10] "Logistics" is defined by the American Council of Logistics Management as: "*the process of planning, implementing and controlling the efficient, cost-effective flow and storage of raw materials, in-process inventory, finished goods, and related information from point of origin to point of consumption for the purpose of conforming to customers' requirements.*"

stock management, packing and labelling of products, insurance and banking operations related to the movement of goods, border formalities in the case of international transport, etc.) results in improved levels of service to customers. Such improvements lead to better quality of delivered products and may be used to increase market shares (or to justify price increases), and thereby generate additional revenues.

31. Transport logistics depends on high standard transport services which can maintain control over worldwide flows of components and products, whilst simultaneously allowing enough flexibility to react to rapid shifts in market demand. Factors such as flexibility, speed and reliability are of primary importance:

a. Flexibility because transport logistics must be adaptable to variations in consumer demand and to unforeseen circumstances;

b. Speed because the speed at which transport operations are carried out can reduce the time during which products -and therefore capital- are tied up; and

c. Reliability because it reduces the risks of a breakdown in the supply or distribution of goods, and thereby lessens the need for safety/buffer stocks.

32. Transport logistics also depends on transport services which can result in lower overall costs of delivered products. The combination of three technically-related types of costs: transport, handling/storage and administration, under the "logistics costs" heading defines the basket out of which alternative solutions have to be selected. The area within which the optimum solution is to be found is therefore considerably extended and allows the decision-maker to choose the optimum logistics solution, which is more important for the firm than the transport optimum. In practical terms, this means that alternatives can now be worked out which, in some cases, could also mean higher transport costs for the firm, these higher transport costs being more than offset by reduced handling/storage and administration costs. Therefore, the inefficiency or lower productivity of one particular mode or interface may be acceptable if it results in proportionately greater gains for the entire system.[11]

33. There are many options available to carriers to improve their transport operations, among which can be mentioned economies of scale and network size, and economies of traffic density.

34. Economies of scale and network size are obtained by producing larger quantities of services with more economical methods. These economies offer the opportunity to expand services on existing networks at a lower cost than expanding services to new destinations, as well as to integrate vertically complementary services. Such economies could lead, for example, to the use of "hub and spoke" systems in air and ocean transportation, to the

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[11] For example, in the transfer of containers between vessels and waiting railway wagons, it may be found that a temporary storage area is required between vessels and wagons, involving double handling of containers, in order to avoid excessive investment in facilities and container handling equipment or drayage costs to other rail terminals. Further discussion on transport and distribution costs can be found in the UNCTAD report, "Information material for shippers to make the most efficient use of multimodal transport" (TD/B/C.4/330), annex I.

development of inland clearance depots (ICD), to the organization of landbridge operations,[12] or to the combination of sea-and-air services.[13]

35. Economies of traffic density are obtained by increasing the use of a system in order to spread system costs among more users. Such economies are usually combined with economies of scale and network size. Economies of traffic density would make greater use of the size of available means of transport (container vessels, wagons, trucks, etc.). Typical examples are the use of large containerships or the development of double-stack train operations.[14] Such economies result in greater use of available infrastructure capacity and higher rentability of capital utilization, and lead to various forms of horizontal integration of services (co-loading agreements, consortia, pools, etc.).

36. With the availability of efficient transport operators, manufacturing industries have set up their production logistics systems according to their own needs, taking into account the characteristics of their products, the places where supplies are bought and goods marketed, and their customer requirements. Accordingly, they demand tailor-made transport logistics services from creative and innovative transport partners who will share risks and rewards, and offer total cooperation in order to obtain the objectives of safe product transport, economy, forward planning, incorporation of new technologies and facilities, and expanded use of communication systems.[15]

37. Such cooperation in the provision of comprehensive services that cross conventional lines of transportation, warehousing and inventory management can result in cost reductions for commercial transactions between manufacturing industries and transport logistics providers, in terms of:

a. A better understanding of each party's needs and limitations, thereby reducing the level of uncertainties in the transaction or the probability of non-performance of the contract: quality of the goods, packaging issues, reliability of transport and ancilliary services, stability of transport rates, etc.;

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12 The Canadian west coast ports' intermodal landbridge can represent a reduction in transit time of as much as 50 per cent over the all-water alternative for cargo moving from Japan to North America's east coast markets (from the article "Intermodal challenges facing Canada", in *World Wide Shipping*, Blauvenlt, N.Y., Sept. 1993).

13 These services offer faster transit times and lower costs than all-air options. For example, the rates from Northern Europe to Australasia via Singapore are 30 to 40 per cent below airfreight rates on a 25-day transit. The sea-only route implies about 40 days in transit (taken from Hans Jurgen Peters, *Seatrade, logistics and transport, Policy and Research Series* No.6 (The World Bank, Washington, USA, 1990)).

14 It is estimated that the stacking of containers in rail services can reduce line haul cost by 60 per cent, a commercial attribute of the service to contracting transport operators (Robert Delaney, *Journal of Commerce*, New York, 21 June 1988).

15 As an example, the construction of the Sony Central Distribution Centre (CDC) -an investment of more than US$ 200 million- is worth mentioning: home electric and electronic appliances produced by five plants are sent to the Singapore CDC where they are stored, packaged and consolidated into containers for shipment by sea. The CDC serves as Sony's Asian export distribution centre. It reapes substantial savings in investment: if each factory had a warehouse, the total monthly expenses would amount to about US$ 12.7 million. By having a CDC in Singapore, the cost incurred is only about US$ 8.6 million, a substantial saving of US$ 4.1 million per month. Other benefits include a 50 per cent reduction in lead time and savings in manpower and transportation costs. (from Port of Singapore Authority *News*, vol.5, No.5, May 1988).

b. Preferential treatment according to the frequency of transactions. Recurring transactions allow the establishment of particular treatments that cannot be set up for one-time or irregular operations; and

c. Long-term commitments, which offer the opportunity to take into account the idiosyncracy of transactions requiring specific investment, for example special handling facilities and equipment, local electronic data interchange (EDI) standard, etc.

38. This cooperation between manufacturers and services providers will have short-term effects on the cost of transport, insurance premiums, banking charges, etc. Longer-term effects can also be expected, since both commercial parties in a market characterized by uncertainties, frequent operations and the need for at least some investment in transaction-specific ("idiosyncratic") equipment or facilities, will tend to form long-term contractual alliances.

39. Most developed countries have paid particular attention to the development of efficient transport logistics services. In the United States of America, for example, there has been a regular effort to reduce logistics costs.[16] Over the period 1982-1992, the increase in total logistics costs from US$ 515 billion to US$ 647 billion has been slower than the increase in gross domestic product from US$ 3.15 trillion to US$ 5.95 trillion. This has resulted in a substantial reduction (some 30 per cent) of the participation of logistics costs in GDP, from 16.35 per cent to 10.87 per cent. As a comparison, in 1992, the participation of logistics costs in GDP was estimated at 10.1 per cent for Japan, 12.2 per cent for Europe and 13 per cent for the new industrialized countries around the Pacific Rim.

40. Transport logistics services are important not only because they boost their users' profitability but also because they are critical to their global competitiveness.[17] However, to take advantage of transport logistics services, manufacturers, traders and, in general, transport users, must adapt their customs of particular trades and commercial practices which, too often, are among the natural barriers that affect trade opportunities.

B. CHANGES IN COMMERCIAL PRACTICES

41. There is no universally applicable law governing international sales/purchase contracts. The obligation of the importer or exporter may be governed by the domestic law of the buyer's or seller's country, or by legal standards derived from international conventions such as the United Nations Convention on Contracts for the International Sale of Goods,[18] and the INCOTERMS of the International Chamber of Commerce (ICC)[19] or by prevailing commercial

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16 *Survey of Current Business; U.S. Statistical Abstract*; U.S. Department of Commerce, from an article by Robert Delaney, Cass Logistics, Inc., published in *Distribution* (Radnor, Pa., July 1993), p.6.

17 *"Almost 50 percent of our real economic growth in the last half of the 1980's and nearly all our growth in our current recovery is attributable to increased exports"*, from "The magic of low-cost logistics", editorial by Thomas A. Foster, ibid., p.4.

18 United Nations Convention on Contracts for the International Sale of Goods (the Vienna Convention), was signed in Vienna, on 11 April 1980, and entered into force on 1 January 1988. As of early 1994, 38 contracting States had ratified the Convention.

19 *INCOTERMS 1990*, ICC publication No.460 (ICC, Paris, 1990).

practices. The parties are free to choose the law applicable, so far as it relates to the private law aspect (law of contract, company law, laws of agency, etc.) of their agreement. However, they do not have any choice but to follow the regulatory provisions of the laws of the country of the buyer or seller regarding, for example, the exchange control regulations, licensing requirements or market/commodity restrictions for export/import.

42. When negotiating a sales/purchase contract, the buyer and the seller have to agree, among other things, on how to share the responsibilities for arranging for the transfer of the goods, on whether the buyer or the seller will cover the specific costs associated with this movement, and on the location of the point where risk of damage or loss is transferred from the seller to the buyer. Reference to a specific INCOTERM in a sales/purchase contract is a shorthand way of affirming the respective responsibilities of the two parties. It serves two purposes: (1) it obviates the need for listing all the obligations of the two parties to the contract and the incidence of associated costs; and (2) it removes the possibility that the parties to the contract may interpret the terms differently.

43. In most countries, international trade is conducted on the basis of traditional commercial practices: exports are made on a ex-works or f.o.b. basis and imports on a c.i.f. basis. Exporting is too often seen as selling surplus farm or factory production overseas. Many producers lack awareness and orientation in becoming exporters. Those who export tend to prefer selling their products on departure instead of taking an aggressive marketing position by selling on delivery terms, particularly when delivery takes place in a developing country.

44. The reasons behind this situation are numerous. The main one is to avoid taking risks (loss, damage, delays, etc.) during the physical transfer of the goods; other reasons include local administrative restrictions such as foreign exchange regulations to control the use of hard currencies. In a -perhaps slightly outdated- analysis of the terms of sales from samples of export invoices taken in 1984 and 1985,[20] H.M. Customs and Excise of the United Kingdom observed that: (1) in trade markets between developed countries, United Kingdom exporters were selling on departure (using ex-works or f.o.b. terms in some 60 per cent of the cases); (2) this behaviour was even more pronounced in trade with the former centrally planned economy countries (in which ex-works and f.o.b. terms represented some 92 per cent of the cases); and (3) in trade with Middle East countries and other developing countries, they were selling on arrival at the port of unloading (using c.i.f. terms in 48 per cent of the cases). Recently, a representative of the American International Freight Association (AIFA) mentioned that: "*by some estimates, almost 70-80 per cent of U.S. exports move either "ex-works" or FOB port of export, because most U.S. shippers do not want to become involved in the complex process of arranging for international transportation movements*".[21]

45. Such commercial practices and, sometimes, customs of particular trades, prevent the use of door-to-door transport services under the responsibility of a single transport operator. Indeed, by using f.o.b. or c.i.f. commercial terms, neither the seller nor the buyer controls the entire transport chain from the seller's premises to those of the buyer. In other words, neither of the two commercial partners is entitled to contract the entire transport operation. The responsibility for the physical transfer of the goods is necessarily shared between the seller

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20 H.M. Customs & Excise, *Export Value Verification Surveys* (London: United Kingdom, 1985).

21 Richard D. Gluck, Counsel, American International Freight Association, in a speech at the Shipping Symposium on International Multimodal Transport, organized by the ICC at Barcelona, Spain, April 1992.

and the buyer. The seller is responsible up to a critical point: the time and place where goods are loaded on to a vessel at the port of origin (in the case of a f.o.b. sale) or the time and place where they are unloaded at the port of destination (c.i.f. sale); from that critical point up to the final destination, the buyer takes over the responsibility for the goods.

46. Some well-organized international transport operators might give the impression that they offer real door-to-door transport services, even when the trade transactions are based on f.o.b. or c.i.f. terms. The fact is that such international transport operators are assembling the entire door-to-door transport chain in two consecutive sets of transport operations. In the first set (for example, in the case of a c.i.f. sale), goods are transported on behalf of the seller by one transport operator (e.g. a multimodal transport operator) or more than one (e.g. successive modal transport operators) from the seller's premises up to the port of unloading. The second set then includes the transport operations performed by a different operator, established in the country of destination and responsible solely to the buyer (because of the c.i.f. sale), for on-going carriage up to the buyer's premises. The "umbrella" transport organization is made of local transport companies working separately at each end of the trade but collaborating under some form of joint venture agreement. Traders may think their goods are handled by a single operator (the international transport operator) when, in fact, they are taken care of by two (or more) different carriers whose respective responsibility is defined in two (or more) different legal systems.

47. Although such a situation does not preclude transport efficiency on the part of the carriers involved, it could lead to some confusion, particularly if damage occurs in a developing country where carriers may be operating under weaker liability regimes than those applicable in the country of the partner at the other end of the trade.

48. It is important therefore for the seller and the buyer to reach an agreement on using an INCOTERM which can leave one of them in a position to fully organize and be responsible for the transfer of the trade goods from the seller's premises to those of the buyer. Terms such as: ex-works (EXW), free-carrier (FCA), carriage-paid-to (CPT), carriage-insurance-paid-to (CIP), delivered-at-frontier (DAF), delivered-duty-unpaid (DDU) or delivered-duty-paid (DDP) should therefore be used.

49. The use of one of these terms rather than another depends on the capacity of one or the other trading partner to find in his country experienced international transport operators which can assist him in fulfilling the commercial implication of his choice. Under normal conditions of trade between countries with well-organized container ports and peaceful labour conditions, the seller may be prepared to assume the risk of transport and to choose an INCOTERM in which his responsibility extends to the arrival of the goods at destination (e.g. DAF, DDU or DDP). A seller who prefers to see the buyer assuming the risk of the transport operation may want to choose an INCOTERM in which his responsibility terminates when he passes over the goods to the first transport operator (e.g. FCA, CPT, CIP), although he might still be obliged to pay for all transport expenses (as he is in the case of CIP and CPT).

C. GOVERNMENT POLICIES

50. Besides the fact that better transport options could be selected if appropriate commercial practices were used, reductions of natural barriers to trade depend first of all on the availability of, and access to, transport services based on technological advances in

transportation and communications. However, the availability of such services and access to them can be facilitated or frustrated by government policies.

51. In most countries, government policies affect the provision and maintenance of basic national infrastructure and equipment in the transport and communications sector. They also affect the treatment of imports and exports, and the provision and conditions governing transport and communications services.

52. The provision and maintenance of adequate transport infrastructure and equipment can lower transportation costs. Indeed, under such conditions, vehicles operate more efficiently and tend to consume less fuel and lubricants. In addition, vehicles can be expected to have a longer life span, reducing the need for frequent replacement and, consequently, the need for foreign currency to buy new vehicles. These policies can also create alternative transport routes with shorter transit times and safer conditions. Transport operations can be handled more safely and efficiently, and substantial reductions in risks (loss and damage) on cargo and in insurance premiums can be expected.

53. Similarly, policies on the provision and maintenance of communications infrastructure and equipment should not be belittled as they can also be beneficial to traders. This was demonstrated in a study sponsored by the International Telecommunication Union (ITU).[22] This study, carried out in Kenya, points out, for example, that a medium-sized company engaged in importing and stocking a wide range of industrial products could save as much as Kenyan Shs 2.4 million (or around 5 per cent of its annual revenues) from improved telecommunications. An international freight forwarding company with headquarters in Nairobi and operations in Mombasa and Kisumu, could save some Kenyan Shs 5.5 million (around 6 per cent of its annual revenues) from the same improvements.

54. Policies on imports and exports, implemented by procedure-oriented Customs administrations might create barriers to trade. For example, sealed containers must be able to move outside port areas and even to cross frontiers when the port-state is used for transit purposes. However, Customs are not the only possible administrative blockage which may be encountered, although they are the most important one. Others which may lie entirely within the private sector in developed countries, for example, financial procedures, are likely in developing countries to involve the Government, either because the banks are state owned or because of exchange control regulations that must be observed. Such regulations, or procedures required to satisfy the regulations, can hinder a viable and valuable enterprise unless prior exemption can be obtained. In the case of many administrative bottlenecks, the problem is not costs or the fact that evasion of the law is being attempted. The problem is the time wasted on procedures which cannot be started before the goods are available and which can extend a programmed stop of twenty-four hours into an unpredictable number of days. To remove such constraints, governments might wish to consider shifting the focus of their administrations from narrow-minded compliance and verification of trade documentation and procedural requirements to a broader trade management orientation.

55. Government policies are particularly important in the provision and conditions of transport and communications services, because such policies specify the respective role of

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22 *The Impact of Telecommunications on the Performance of a Sample of Business Enterprises in Kenya*, a research report for the International Telecommunication Union (ITU) by Communications Studies and Planning International (Geneva, January 1982).

the public and private sectors. A public sector activity is motivated by public interest, a private enterprise by the expectation of profits. Their mutually dependent roles can be geared towards the provision of transport services that are innovative, productive and cost-effective, in the context of the globalization of trade and the adoption of export-oriented macroeconomic policies.

56. Government regulations for public utilities reflect public policy objectives: economic regulations to protect consumer welfare in terms of prices, security and quality of service; technical regulations for insuring vehicle standards, for instance; environmental regulations, including pollution control; regulations on social grounds, e.g. to ensure essential services for certain social groups, etc. These regulations might cover the privatization or the commercialization of transport-related public utilities such as ports, inland clearance depots and other basic transport infrastructure.

57. Privatization eliminates government participation in enterprises' capital and management, whereas commercialization only leaves the management under private interests. Both privatization and commercialization open businesses and organizations to strong market forces. While ownership often matters, competition matters even more for the achievement of the efficiency gains which privatization and commercialization are meant to bring about. Two examples illustrate this point. Privatization of the container terminal at the port of Kelang (Malaysia) in March 1986 led to a lowering of costs and an increase in productivity.[23] The Government of Chile created competition in cargo-handling and storage operations by authorizing the private sector to establish stevedoring companies.[24] By doing so, cargo-handling productivity at the port of Valparaiso increased from 2,060 boxes of fruit per hour in 1978-1979 to 6,500 in 1985-1986. Vessel port-stay times decreased from 129 to 40 hours, and per box costs from US$ 0.54 to US$ 0.26.

58. Liberalization and deregulation policies are designed to open a market to competitive domestic and, possibly, foreign forces by reducing government intervention in a given economic activity. Excessive government intervention in transport services either through regulation of private operators (e.g. establishment of tariffs) or manipulation of public enterprises (e.g. provision of subsidies) limits the responsiveness of supply to the highly dynamic and varied demand for transport. Liberalization and deregulation policies can stimulate competition, enhance the role of private enterprises, and result in more efficient and profitable behaviour of the market forces in the transport sector.

59. The opening of the market for international transport services could lead small developing country transport companies to seek support and cooperation, in the form of joint ventures, management contracts and the sale of shares, with established international transport operators from developed countries. This would reduce operational and technical inefficiencies, improve management performance and increase transfer of know-how and technology, taking advantage of any applicable form of technological development, including EDI.

60. Where they do not exist yet, government regulations are necessary to define the

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23 "*Malaysia's Port Kelang, Kuanton Register Strong Cargo Growth*", article by P.T. Bangsberg, published in the *Journal of Commerce*, 1 February 1991.

24 Reported in "The restructuring of public-sector enterprises: the case of Latin American and Caribbean ports", *Cuadernos de la CEPAL*, No.68, ECLAC, Santiago de Chile, 1992, p.88.

institutional and legal environment of international transport services. In most countries, there is no institution that supervises the overall issues of international transport. The approach is generally fragmented on a modal basis, with limited contributions from the commercial private partners (traders and services providers, including transport operators), which have to struggle with inefficiency of the existing transport system and administrative procedures. The case of freight forwarding companies needs to be mentioned in this general context. These companies are often only commercial entities and are not considered legally as transport companies. They manage international transport operations but, in many countries, are not entitled to issue transport documents. In such situations, governments might regulate their activities (by a licensing system, for example). This would provide an orderly system in which transport users were protected from informal or marginal operators, and freight forwarders acting as carriers were fully recognized by banks, insurance companies and other services providers.

D. A MEASURE OF IMPROVEMENT

61. By combining the means discussed in this chapter, overall transport costs can be reduced and trading opportunities improved. The magazine *Distribution* reports that, in the United States, a one per cent reduction in the nation's transport logistics costs could be achieved by cutting US$ 55 billion from transportation and inventory costs.[25] The first US$ 25 billion could come from savings resulting from the enactment of several pieces of legislation, e.g. to rebuild highways, complete the deregulation of interstate carriers, remove state regulation of trucking and reduce the burden imposed by states on trucking through bureaucratic registration and taxation. The other US$ 30 billion would come from improved companies' logistics operations, reducing inventories (and thereby the carrying costs) by 15 per cent. The report mentioned that reducing inventories by 15 per cent appeared to be feasible for any company, especially those that had yet to take a critical look at their distribution networks. With advanced computer systems, even the most sophisticated companies can find ways to replace inventories with information.

62. This study demonstrated that a potential for improvements exists under the present conditions. Transport logistics costs can be reduced for the benefit of traders, services providers and national economies. These improvements involve positive actions and measures from the three main players in the international trade arena of a country, namely, the government authorities (as "rule-makers"), the transport users (buyers and sellers, importers and exporters) and the services providers (transport operators, banking institutions, insurance companies, etc.). The following chapter will describe how a multimodal transport approach can bring together the concerns of these three players, and will outline some of the most relevant benefits that can result from it.

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25 "*The $55 billion logistics challenge*", article by Thomas A. Foster making reference to the report by Robert Delaney, "State of business logistics", Cass Logistics, 1990, published in *Distribution* (Radnor, Pa., July 1991), p.4.

Chapter III

IMPACT OF MULTIMODAL TRANSPORT ON TRADING OPPORTUNITIES

A. THE CHARACTERISTICS OF MULTIMODAL TRANSPORT

63. Since the introduction of containerization and the later development of EDI, international trade has been increasingly demanding efficient commercial transactions. To take advantage of the potential offered by the new technologies, the international trading community updated its uniform commercial practices regarding trading terms,[26] letters of credit,[27] and multimodal transport documents.[28] Within the available transport conditions and legal environment, transport operators have developed transport systems to fulfil customers' requirements, offering competitive services and making trade more efficient. Transport operators have started to put into practice the concept of multimodal transport.

64. Taking as a reference the definition of multimodal transport as contained in the MT Convention,[29] multimodal transport is characterized by the fact that it is:

a. A **service activity**, which refers to the carriage of goods under a transport contract between the multimodal transport operator (the MTO) and its client;
b. A **commercial activity**, which should be performed by qualified international transport operators and which therefore requires a legal framework to ensure minimum standards in the provision of services and some protection of the interests of the various commercial parties involved; and
c. An **international activity** by which goods pass from one country to another and use various transportation modes, involving different fiscal regimes and responsibility regimes which must be harmonized.

65. Multimodal transport is a service innovation by which the MTO assumes a contractual responsibility to move goods from a point of origin (in one country) to a destination (in another country) under a transport contract, for an agreed price with -possibly- a time-limit for the delivery. This service innovation ensures that the goods will move to their destination as fast and securely as possible, at a cost known in advance.

66. Indeed, for its own sake, the MTO must organize a transport chain over which it has full control. It selects the most suitable transport modes and interface combinations whose sum of costs, added to its own management charges, does not exceed the agreed price of the

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[26] *INCOTERMS 1990*, ICC publication No 460 (ICC, Paris, 1990)

[27] *Uniform Customs and Practice for Documentary Credits*, ICC publication No 500 (ICC, Paris, 1993)

[28] UNCTAD/ICC *Rules for Multimodal Transport Documents*, ICC publication No 481 (ICC, Paris, 1992)

[29] According to article 2 of the United Nations Convention on International Multimodal Transport of Goods, multimodal transport is defined as "*the carriage of goods by at least two different modes of transport on the basis of a multimodal transport contract from a place in one country at which the goods are taken in charge by the multimodal transport operator to a place designated for delivery situated in a different country*".

service. The MTO's competitiveness in offering services depends on how it can take advantage of all possible transport management techniques available to make better use of the existing capacity and operating conditions of each specific transport link of the chain. The MTO is providing *transport logistics* services.

67. More importantly, the MTO is responsible for the goods under its custody, from origin to destination, a situation which is not necessarily the case under transport logistics services. Being responsible for the safe, on-time delivery of the goods, the MTO must make sure that the goods are moving properly towards their final destination. Stranded goods result in higher risks (in terms of loss or damage) to the goods and possible breaches of an on-time delivery commitment, for which the MTO might have to respond. To reduce its own risks and transport logistics costs, the MTO's primary concern is to increase the overall cargo speed during transit between origin and destination.

68. Multimodal transport is also a commercial activity carried out by professional transport operators such as vessel operators and non-vessel operators (including modal operators and freight forwarders). They are part of the transport sector of a country and, as such, must be fully recognized as qualified to manage international transport operations. Without such formal recognition, they might not be authorized to issue multimodal transport documents accepted by local and international banks, and might not be entitled to proper liability insurance coverage. This is the case in a number of countries where international transport operations can only be handled by ocean and air carriers. In those countries, land-based transport operators can only issue modal transport documents, and freight forwarders have no legal existence as carriers and therefore cannot issue any transport document.

69. Finally, international multimodal transport is also an activity that crosses national frontiers. Not only must the goods comply with specific import and export regulations at each end of the trade, but the MTO must also be recognized as a carrier in its own country as well as in the trading partner's country. This highlights the importance of developing internationally harmonized governmental regulations and commercial practices regarding, *inter alia*, the profession of "multimodal transport operator".

70. Multimodal transport has an impact on trading opportunities. The main thrust of this impact is directed towards trading opportunities between sellers and buyers to whom it provide *responsible* transport logistics services. But multimodal transport also generates new trading opportunities for transport operators, particularly from developing countries. With the proper institutional and legal framework, and with appropriate awareness of trade- and transport-related administration and potential users, local transport companies can enter the worldwide market of international transport.

71. The development of multimodal transport in a country implies consideration of the interlinked roles of the three main players closely involved in the transport of the country's international trade:

- the **Government**, which designs and implements national laws and regulations regarding trade and transport;
- the **services providers** (carriers, freight forwarders, MTOs, banking institutions, insurance companies, etc.), which can offer market-oriented trade and transport solutions within the framework of national and international trade and transport practices; and

- the **transport users** (importers and exporters), which can take advantage of such solutions in their international trade transactions.

72. Such a multimodal transport approach must encompass not only the economic, commercial and operational aspects of the international movement of goods, but also all issues related to the facilitation of trade and the responsibility for the goods while in transit. To take into account all interests involved in the development of multimodal transport, the relationships between the above-mentioned players must be clearly identified and proper coordination in the implementation of improvements must be established.

73. Some of the most relevant relationships between the three players are summarized in the annex to this report. This annex shows a number of actions that could be taken by one party *vis-à-vis* another; it stresses the importance of setting up a proper consultation mechanism in a country between these players. Such a mechanism could be a Trade and Transport Facilitation Committee which has been established in various UNCTAD-executed technical assistance projects.[30] It could also take the form of a public or private initiative such as "Advantage Canada", a transportation alliance between Canada's two national railways, CN North America and CP Rail System, and all the players in Canadian cargo transportation.[31] Created to promote the greater use of Canadian transportation routings, Advantage Canada's ultimate objective is to provide a coordinated and seamless system of cargo transportation in Canada for both shippers and the transport industry. Having been designed to complement, not to substitute for, the competitive strategies and actions of its members, Advantage Canada enhances the competitiveness and quality standards of Canada's transportation system.

B. POSSIBLE BENEFITS OF MULTIMODAL TRANSPORT

74. By introducing the concept of multimodal transport, a country has the opportunity to realize synergies from the potential improvements which can be obtained from public and private interests: public administrations, state-owned and private transport companies, importers and exporters. Multimodal transport should be seen as a systems approach to trade efficiency, not as a turn-key system which can be bought and installed from one day to the next.

75. Such a systems approach calls for an integrated view of all relevant trade and transport-related issues in a country. Governments can take a leading role in supporting this approach by designing the proper legal framework and streamlining administrative bottlenecks (Customs, banking, insurance, foreign exchange controls, etc.).

76. The multimodal transport approach can promote a greater awareness of the importance of specific modal and interface improvements, and of the need for properly regulated transport operators. It can result in additional short-term benefits and longer-term consequences for all three key players: transport users, services providers and government.

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30 For example, Intermodal Transport and Customs Facilitation Projects, carried out in cooperation with the World Bank, in Ethiopia (ETH/89/014), in Pakistan (PAK/91/009) and in Mozambique (MOZ/92/A19).

31 Hassan J. Ansary, "Intermodal challenges facing Canada", *World Wide Shipping*, Blauvenlt, N.Y. September 1993, pp.72-75.

1. Short-term benefits

77. In the short term, **transport users** can expect economic and financial benefits, mainly from the greater care taken by an MTO of the goods in its custody, in the form of the following factors:

a. Reduced transit time; increased time reliability; and increased security of cargo, particularly at interface points;
b. Reduced transport costs (e.g. from negotiated rates on quantity cargo) and other associated costs (resulting from the use of modern transport-related technologies: containers, EDI, computerized cargo tracking systems, etc.);
c. Pre-agreed price for the door-to-door transport operation;
d. Closer commercial relationships with services providers;
e. Greater awareness and understanding of transport-related issues regarding their trade (INCOTERMS, cargo security, packing, insurance, banking, etc.); and
f. New trading opportunities from non-traditional exports, under the stimulus of improved transport services.

78. **Services providers** and, particularly, transport operators could gain immediate benefits from:

a. Boosting their profession as international transport operators (this is particularly true for freight forwarders becoming MTOs);
b. Increasing their local market shares and opening new markets overseas, thereby increasing their profits;
c. Increasing their financial liquidity through the collection of prepaid freight on containerized door-to-door transport contracts,[32] providing them with key financial leverage and with the possibility of sub-contracting shipping, railway and truck space at competitive rates while controlling sub-contractors' payment schedules (usually after services have been rendered);[33]
d. Commercial incentives to adapt to transport-related technologies (transfer of technology effect) such as containerization and EDI; and
e. The need to reconsider their marketing strategies and, for example, concentrate their activities in "niche" operations to serve specific commodities on specific trade routes.

79. Other local services providers, such as banks and insurance companies, will also increase their business opportunities as a consequence of increased trade transactions.

80. **Governments** can also benefit from a MT approach since it offers the opportunity to streamline and update trade- and transport-related administrative procedures and regulations. It also stimulates trade, promotes new activities for the country's transport sector and saves

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[32] This sound commercial practice might be hampered by local competitive conditions forcing the services providers to accept late payments and thus "finance" the transport costs of an international trade transaction.

[33] By providing integrated services, the MTO receives more money for transporting the cargo. For example, as the ocean portion of a MT operation often comes to only 30 per cent or less of the total freight bill, a vessel-operating MTO has more than tripled its cash flow compared to the time when the MTO provided ocean transport services only.

on (and possibly earns) hard currency.

2. Longer-term consequences

81. In the longer term, as reliable and efficient MT services develop, **transport users** will be able to look into the reorganization of their distribution outlets. This can already be seen in the European context where the simplification of border crossings and the harmonization of transport policies have fostered the development of new forms of logistics operations (e.g. networks of logistics hubs and alliances to make modal operations more efficient).

82. Under the pressure of transport users and to maintain their competitiveness, **transport operators** will have to restructure their operations, taking advantage, among other things, of joint-ventures with foreign partners. They will increasingly try to differentiate their services in an effort to gain a competitive market advantage. By offering a greater choice of available value-added services for potential transport users, they may be able to grasp larger market shares and increase their profits.

83. **Governments** will have to plan infrastructure developments and to design institutional organizations with increased attention to the needs of the transport industry so as to serve the national economy more effectively. In order to reduce the inefficiencies of the national transport and trade system, and to create an appropriate environment for the development of MT, governments will therefore have to take into consideration a number of coordinated measures such as:

a. **Regulatory measures** to harmonize transport liability regimes and insurance practices, and to provide an appropriate legal framework for the establishment and development of a private sector of local MTOs;
b. **Trade and transport facilitation measures** (Customs regulations, trade and transport documentation, EDI technology, etc.) and their acceptance by the trading community, transport operators, government agencies, banks and insurance companies;
c. **Development policy measures** to ensure the smooth development of Customs and transport operations/services and to avoid misallocation of resources, particularly regarding the computerization of the Customs administration and the improvement of physical infrastructure (Customs facilities, inland clearance depots, intermodal transfer facilities, etc.) and transport/telecommunications equipment; and
d. **Human resource development measures** to secure the adequate training of nationals from both public and private sectors (particularly freight forwarders) to improve management of transport operations and reorganization of transport enterprises.

84. These measures will have to be formulated as the result of a dynamic and progressive process supported by the necessary levels of policy analysis, conceptual innovation, research and inputs from both governmental and non-governmental experts and actors.

85. Better cooperation between the public and private sectors in the national trade and transport fields should therefore be encouraged by establishing, jointly with governments, national working groups, which can discuss and understand the issues of the MT environment and recommend policy and operational measures to governments and other parties concerned for consideration.

86. The various forms of cooperation and coordination mentioned earlier will require substantial inputs to keep all parties concerned abreast of ongoing developments in the field of MT, containerization and technological development.[34] Previous reports prepared by the UNCTAD secretariat[35] have indicated possible measures and actions to provide such inputs.

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34 Private initiatives such as the "Club of Valencia", an international group of MT specialists created at Valencia in November 1993, could channel such substantial inputs to assist the secretariat in its substantive work.

35 See UNCTAD reports on "Information material for shippers to make the most efficient use of multimodal transport" (TD/B/C.4/330), and on "Practical problems faced by governments and commercial parties involved in multimodal transport operations to and from developing countries" (TD/B/C.4/AC.11/4).

Annex

RELATIONSHIPS BETWEEN PARTIES INVOLVED IN INTERNATIONAL TRADE AND TRANSPORT

This table indicates some typical actions which could be taken by one party (shown in a row)

vis-à-vis another party (shown in a column).

Some actions by one party *vis-à-vis* another	**RULE-MAKERS**	**BUYERS and SELLERS**	**SERVICES PROVIDERS including Transport Operators**
RULE-MAKERS	■ Simplification of Customs procedures ■ Liberalization of foreign exchange controls	■ Export promotion strategies ■ Import substitution strategies ■ Customs bond and bonded warehouse systems	■ Provision of infrastucture and equipment ■ Establishment of legal requirements (licences) ■ Establishment of performance bonds ■ Liberalization of services
BUYERS and SELLERS	■ Lobby/pressure for appropriate regulations	■ Better use of aligned commercial practices ■ Better understanding of product requirements ■ Negotiating power through shippers' councils	■ Long-term partnership with selected operators ■ Better information sharing on needs to satisfy ■ Search for competitive bidding
SERVICES PROVIDERS	■ Lobby/pressure for appropriate regulations (particularly from transport operators)	■ Marketing transport and trade-related services ■ Closer relationships with clients ■ Better understanding of clients' needs	■ Strengthening of professional associations ■ Improvement of logistics for efficient transport services ■ Innovation with "niche" transport operations

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RELATIONSHIPS BETWEEN PARTIES INVOLVED IN INTERNATIONAL TRADE AND TRANSPORT

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Some actions by one party vis-à-vis another	RULE-MAKERS	BUYERS and SELLERS	SERVICES PROVIDERS (including Transport Operators)
RULE-MAKERS	• Simplification of Customs procedures • Liberalization of foreign exchange controls	• Export promotion strategies • Import substitution strategies • Customs bond and bonded warehouse systems	• Provision of infrastucture and equipment • Establishment of legal requirements (licences) • Establishment of performance bonds • Liberalization of services
BUYERS and SELLERS	• Lobby/pressure for appropriate regulations	• Better use of aligned commercial practices • Better understanding of product requirements • Negotiating power through shippers' councils	• Long-term partnership with selected operators • Better information sharing on needs to satisfy • Search for competitive bidding
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